SEQUENCE LISTING

<110> Gaiger, Alexander
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Smithgall, Molly
Moulton, Gus
Vedvick, Thomas S.
Sleath, Paul

<120> COMPOSITIONS AND METHODS FOR WT1
SPECIFIC IMMUNOTHERAPY

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<211> 9
<212> PRT
<213> Mus musculus

<400> 308
Tyr Ser Ser Asp Asn Leu Tyr Gln Met
1 5

<210> 309
<211> 6
<212> PRT
<213> Homo sapien

<400> 309
Gly Ala Ala Gln Trp Ala
1 5

<210> 310
<211> 12
<212> PRT
<213> Homo sapien

<400> 310
Ala Ser Ala Tyr Gly Ser Leu Gly Gly Pro Ala Pro
1 5 10

<210> 311
<211> 15
<212> PRT
<213> Homo sapien

<400> 311
Ala Phe Thr Val His Phe Ser Gly Gln Phe Thr Gly Thr Ala Gly
1 5 10 15

<210> 312
<211> 5
<212> PRT
<213> Homo sapien

<400> 312
His Ala Ala Gln Phe
1 5

<210> 313
<211> 32
<212> PRT
<213> Homo sapien

<400> 313
Cys His Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln Ala Leu Leu Leu
1 5 10 15
Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu
20 25 30

<210> 314
<211> 32
<212> PRT
<213> Homo sapien

<400> 314
Arg Ile His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg
1 5 10 15
Val Pro Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser
20 25 30

<210> 315
<211> 4
<212> PRT
<213> Homo sapien

<400> 315
Arg Tyr Phe Lys
1

<210> 316
<211> 14
<212> PRT
<213> Homo sapien

<400> 316
Glu Arg Arg Phe Ser Arg Ser Asp Gln Leu Lys Arg His Gln
1 5 10

<210> 317
<211> 22
<212> PRT
<213> Homo sapien

<400> 317
Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr
1 5 10 15
His Thr Gly Lys Thr Ser
20

<210> 318
<211> 21
<212> PRT
<213> Homo sapien

<400> 318
Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val Arg His His Asn
1 5 10 15
Met His Gln Arg Asn
20

<210> 319
<211> 449
<212> PRT
<213> Homo sapien

<400> 319
Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro
1 5 10 15
Ser Leu Gly Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala
20 25 30
Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr
35 40 45
Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro Pro
50 55 60
Pro Pro Pro Pro His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly
65 70 75 80
Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe
85 90 95
Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe
100 105 110
Gly Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe
115 120 125
Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile

```
    130                 135                 140
Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr
145                 150                 155                 160
Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe
                165                 170                 175
Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln
            180                 185                 190
Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser
        195                 200                 205
Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp
    210                 215                 220
Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln
225                 230                 235                 240
Met Asn Leu Gly Ala Thr Leu Lys Gly Val Ala Ala Gly Ser Ser Ser
                245                 250                 255
Ser Val Lys Trp Thr Glu Gly Gln Ser Asn His Ser Thr Gly Tyr Glu
            260                 265                 270
Ser Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile
        275                 280                 285
His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg Val Pro
    290                 295                 300
Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys
305                 310                 315                 320
Arg Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys
                325                 330                 335
Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly Glu Lys Pro
            340                 345                 350
Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Ser Arg Ser Asp
        355                 360                 365
Gln Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro Phe Gln
    370                 375                 380
Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr
385                 390                 395                 400
His Thr Arg Thr His Thr Gly Lys Thr Ser Glu Lys Pro Phe Ser Cys
                405                 410                 415
Arg Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val
            420                 425                 430
Arg His His Asn Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala
        435                 440                 445
Leu
```

<210> 320
<211> 449
<212> PRT
<213> Mus musculus

<400> 320

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Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Ser
 1               5                  10                  15
Ser Leu Gly Gly Gly Gly Gly Cys Gly Leu Pro Val Ser Gly Ala Ala
            20                  25                  30
Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr
        35                  40                  45
```

```
Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro Pro
    50                  55                  60
Pro Pro Pro Pro His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly
65                  70                  75                  80
Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Leu His Phe
                85                  90                  95
Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe
            100                 105                 110
Gly Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe
        115                 120                 125
Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Thr Ile
    130                 135                 140
Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Ala Pro Ser Tyr
145                 150                 155                 160
Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe
                165                 170                 175
Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln
            180                 185                 190
Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser
        195                 200                 205
Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp
    210                 215                 220
Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln
225                 230                 235                 240
Met Asn Leu Gly Ala Thr Leu Lys Gly Met Ala Ala Gly Ser Ser Ser
                245                 250                 255
Ser Val Lys Trp Thr Glu Gly Gln Ser Asn His Gly Ile Gly Tyr Glu
            260                 265                 270
Ser Asp Asn His Thr Ala Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile
        275                 280                 285
His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg Val Ser
    290                 295                 300
Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys
305                 310                 315                 320
Arg Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys
                325                 330                 335
Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly Glu Lys Pro
            340                 345                 350
Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Ser Arg Ser Asp
        355                 360                 365
Gln Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro Phe Gln
    370                 375                 380
Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr
385                 390                 395                 400
His Thr Arg Thr His Thr Gly Lys Thr Ser Glu Lys Pro Phe Ser Cys
                405                 410                 415
Arg Trp His Ser Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val
            420                 425                 430
Arg His His Asn Met His Gln Arg Asn Met Thr Lys Leu His Val Ala
        435                 440                 445
Leu
```

<210> 321

<211> 9
<212> PRT
<213> Homo sapien and Mus musculus

<400> 321
Pro Ser Gln Ala Ser Ser Gly Gln Ala
1 5

<210> 322
<211> 9
<212> PRT
<213> Homo sapien and Mus musculus

<400> 322
Ser Ser Gly Gln Ala Arg Met Phe Pro
1 5

<210> 323
<211> 9
<212> PRT
<213> Homo sapien and Mus musculus

<400> 323
Gln Ala Arg Met Phe Pro Asn Ala Pro
1 5

<210> 324
<211> 9
<212> PRT
<213> Homo sapien and Mus musculus

<400> 324
Met Phe Pro Asn Ala Pro Tyr Leu Pro
1 5

<210> 325
<211> 9
<212> PRT
<213> Homo sapien and Mus musculus

<400> 325
Pro Asn Ala Pro Tyr Leu Pro Ser Cys
1 5

<210> 326
<211> 9
<212> PRT
<213> Homo sapien and Mus musculus

<400> 326
Ala Pro Tyr Leu Pro Ser Cys Leu Glu
1 5

<210> 327
<211> 1029
<212> DNA
<213> Homo sapiens

<400> 327
atgcagcatc accaccatca ccacatgagc gataaaatta ttcacctgac tgacgacagt 60
tttgacacgg atgtactcaa agcggacggg gcgatcctcg tcgatttctg ggcagagtgg 120
tgcggtccgt gcaaaatgat cgccccgatt ctggatgaaa tcgctgacga atatcagggc 180
aaactgaccg ttgcaaaact gaacatcgat caaaaccctg gcactgcgcc gaaatatggc 240
atccgtggta tcccgactct gctgctgttc aaaaacggtg aagtggcggc aaccaaagtg 300
ggtgcactgt ctaaaggtca gttgaaagag ttcctcgacg ctaacctggc cggttctggt 360
tctggccata tgcagcatca ccaccatcac cacgtgtcta tcgaaggtcg tgctagctct 420
ggtggcagcg gtctggttcc gcgtggtagc tctggttcgg gggacgacga cgacaaatct 480
agtaggcaca gcacagggta cgagagcgat aaccacacaa cgcccatcct ctgcggagcc 540
caatacagaa tacacacgca cggtgtcttc agaggcattc aggatgtgcg acgtgtgcct 600
ggagtagccc cgactcttgt acggtcggca tctgagacca gtgagaaacg ccccttcatg 660
tgtgcttacc caggctgcaa taagagatat tttaagctgt cccacttaca gatgcacagc 720
aggaagcaca ctggtgagaa accataccag tgtgacttca aggactgtga acgaaggttt 780
tttcgttcag accagctcaa aagacaccaa aggagacata caggtgtgaa accattccag 840
tgtaaaactt gtcagcgaaa gttctcccgg tccgaccacc tgaagaccca caccaggact 900
catacaggtg aaaagccctt cagctgtcgg tggccaagtt gtcagaaaaa gtttgcccgg 960
tcagatgaat tagtccgcca tcacaacatg catcagagaa acatgaccaa actccagctg 1020
gcgctttga 1029

<210> 328
<211> 1233
<212> DNA
<213> Homo sapiens

<400> 328
atgcagcatc accaccatca ccacatgagc gataaaatta ttcacctgac tgacgacagt 60
tttgacacgg atgtactcaa agcggacggg gcgatcctcg tcgatttctg ggcagagtgg 120
tgcggtccgt gcaaaatgat cgccccgatt ctggatgaaa tcgctgacga atatcagggc 180
aaactgaccg ttgcaaaact gaacatcgat caaaaccctg gcactgcgcc gaaatatggc 240
atccgtggta tcccgactct gctgctgttc aaaaacggtg aagtggcggc aaccaaagtg 300
ggtgcactgt ctaaaggtca gttgaaagag ttcctcgacg ctaacctggc cggttctggt 360
tctggccata tgcagcatca ccaccatcac cacgtgtcta tcgaaggtcg tgctagctct 420
ggtggcagcg gtctggttcc gcgtggtagc tctggttcgg gggacgacga cgacaaatct 480
agtaggggct ccgacgttcg tgacctgaac gcactgctgc cggcagttcc gtccctgggt 540
ggtggtggtg gttgcgcact gccggttagc ggtgcagcac agtgggctcc ggttctggac 600
ttcgcaccgc cgggtgcatc cgcatacggt tccctgggtg gtccggcacc gccgccggca 660
ccgccgccgc cgccgccgcc gccgccgcac tccttcatca aacaggaacc gagctggggt 720
ggtgcagaac cgcacgaaga acagtgcctg agcgcattca ccgttcactt ctccggccag 780
ttcactggca cagccggagc ctgtcgctac gggcccttcg gtcctcctcc gcccagccag 840
gcgtcatccg gccaggccag gatgtttcct aacgcgccct acctgcccag ctgcctcgag 900
agccagcccg ctattcgcaa tcagggttac agcacggtca ccttcgacgg gacgcccagc 960
tacggtcaca cgccctcgca ccatgcggcg cagttcccca accactcatt caagcatgag 1020
gatcccatgg gccagcaggg ctcgctgggt gagcagcagt actcggtgcc gcccccggtc 1080
tatggctgcc acacccccac cgacagctgc accggcagcc aggctttgct gctgaggacg 1140
ccctacagca gtgacaattt ataccaaatg acatcccagc ttgaatgcat gacctggaat 1200
cagatgaact taggagccac cttaaagggc tga 1233

<210> 329

<211> 1776
<212> DNA
<213> Homo sapiens

<400> 329
atgcagcatc accaccatca ccacatgagc gataaaatta ttcacctgac tgacgacagt 60
tttgacacgg atgtactcaa agcggacggg gcgatcctcg tcgatttctg ggcagagtgg 120
tgcggtccgt gcaaaatgat cgccccgatt ctggatgaaa tcgctgacga atatcagggc 180
aaactgaccg ttgcaaaact gaacatcgat caaaaccctg gcactgcgcc gaaatatggc 240
atccgtggta tcccgactct gctgctgttc aaaaacggtg aagtggcggc aaccaaagtg 300
ggtgcactgt ctaaaggtca gttgaaagag ttcctcgacg ctaacctggc cggttctggt 360
tctggccata tgcagcatca ccaccatcac cacgtgtcta tcgaaggtcg tgctagctct 420
ggtggcagcg gtctggttcc gcgtggtagc tctggttcgg gggacgacga cgacaaatct 480
agtaggatgg gctccgacgt tcgtgacctg aacgcactgc tgccggcagt tccgtccctg 540
ggtggtggtg gtggttgcgc actgccggtt agcggtgcag cacagtgggc tccggttctg 600
gacttcgcac cgccgggtgc atccgcatac ggttccctgg gtggtccggc accgccgccg 660
gcaccgccgc cgccgccgcc gccgccgccg cactccttca tcaaacagga accgagctgg 720
ggtggtgcag aaccgcacga agaacagtgc ctgagcgcat tcaccgttca cttctccggc 780
cagttcactg gcacagccgg agcctgtcgc tacgggccct tcggtcctcc tccgcccagc 840
caggcgtcat ccggccaggc caggatgttt cctaacgcgc cctacctgcc cagctgcctc 900
gagagccagc ccgctattcg caatcagggt tacagcacgg tcaccttcga cgggacgccc 960
agctacggtc acacgccctc gcaccatgcg gcgcagttcc ccaaccactc attcaagcat 1020
gaggatccca tgggccagca gggctcgctg ggtgagcagc agtactcggt gccgcccccg 1080
gtctatggct gccacacccc caccgacagc tgcaccggca gccaggcttt gctgctgagg 1140
acgccctaca gcagtgacaa tttataccaa atgacatccc agcttgaatg catgacctgg 1200
aatcagatga acttaggagc caccttaaag ggccacagca cagggtacga gagcgataac 1260
cacacaacgc ccatcctctg cggagcccaa tacagaatac acacgcacgg tgtcttcaga 1320
ggcattcagg atgtgcgacg tgtgcctgga gtagccccga ctcttgtacg gtcggcatct 1380
gagaccagtg agaaacgccc cttcatgtgt gcttacccag gctgcaataa gagatatttt 1440
aagctgtccc acttacagat gcacagcagg aagcacactg gtgagaaacc ataccagtgt 1500
gacttcaagg actgtgaacg aaggtttttt cgttcagacc agctcaaaag acaccaaagg 1560
agacatacag gtgtgaaacc attccagtgt aaaacttgtc agcgaaagtt ctcccggtcc 1620
gaccacctga agacccacac caggactcat acaggtgaaa agcccttcag ctgtcggtgg 1680
ccaagttgtc agaaaaagtt tgcccggtca gatgaattag tccgccatca caacatgcat 1740
cagagaaaca tgaccaaact ccagctggcg ctttga 1776

<210> 330
<211> 771
<212> DNA
<213> Homo sapiens

<400> 330
atgcagcatc accaccatca ccacggctcc gacgttcgtg acctgaacgc actgctgccg 60
gcagttccgt ccctgggtgg tggtggtggt tgcgcactgc cggttagcgg tgcagcacag 120
tgggctccgg ttctggactt cgcaccgccg ggtgcatccg catacggttc cctgggtggt 180
ccggcaccgc cgccggcacc gccgccgccg ccgccgccgc cgccgcactc cttcatcaaa 240
caggaaccga gctggggtgg tgcagaaccg cacgaagaac agtgcctgag cgcattcacc 300
gttcacttct ccggccagtt cactggcaca gccggagcct gtcgctacgg gcccttcggt 360
cctcctccgc ccagccaggc gtcatccggc caggccagga tgtttcctaa cgcgccctac 420
ctgcccagct gcctcgagag ccagcccgct attcgcaatc agggttacag cacggtcacc 480
ttcgacggga cgcccagcta cggtcacacg ccctcgcacc atgcggcgca gttccccaac 540
cactcattca agcatgagga tcccatgggc cagcagggct cgctgggtga gcagcagtac 600
tcggtgccgc ccccggtcta tggctgccac acccccaccg acagctgcac cggcagccag 660
gctttgctgc tgaggacgcc ctacagcagt gacaatttat accaaatgac atcccagctt 720

gaatgcatga cctggaatca gatgaactta ggagccacct taaagggctg a 771

<210> 331
<211> 567
<212> DNA
<213> Homo sapiens

<400> 331
atgcagcatc accaccatca ccaccacagc acagggtacg agagcgataa ccacacaacg 60
cccatcctct gcggagccca atacagaata cacacgcacg gtgtcttcag aggcattcag 120
gatgtgcgac gtgtgcctgg agtagccccg actcttgtac ggtcggcatc tgagaccagt 180
gagaaacgcc ccttcatgtg tgcttaccca ggctgcaata agagatattt taagctgtcc 240
cacttacaga tgcacagcag gaagcacact ggtgagaaac cataccagtg tgacttcaag 300
gactgtgaac gaaggttttt tcgttcagac cagctcaaaa gacaccaaag gagacataca 360
ggtgtgaaac cattccagtg taaaacttgt cagcgaaagt tctcccggtc cgaccacctg 420
aagacccaca ccaggactca tacaggtgaa aagcccttca gctgtcggtg gccaagttgt 480
cagaaaaagt ttgcccggtc agatgaatta gtccgccatc acaacatgca tcagagaaac 540
atgaccaaac tccagctggc gctttga 567

<210> 332
<211> 342
<212> PRT
<213> Homo sapiens

<400> 332
Met Gln His His His His His His Met Ser Asp Lys Ile Ile His Leu
1 5 10 15
Thr Asp Asp Ser Phe Asp Thr Asp Val Leu Lys Ala Asp Gly Ala Ile
20 25 30
Leu Val Asp Phe Trp Ala Glu Trp Cys Gly Pro Cys Lys Met Ile Ala
35 40 45
Pro Ile Leu Asp Glu Ile Ala Asp Glu Tyr Gln Gly Lys Leu Thr Val
50 55 60
Ala Lys Leu Asn Ile Asp Gln Asn Pro Gly Thr Ala Pro Lys Tyr Gly
65 70 75 80
Ile Arg Gly Ile Pro Thr Leu Leu Leu Phe Lys Asn Gly Glu Val Ala
85 90 95
Ala Thr Lys Val Gly Ala Leu Ser Lys Gly Gln Leu Lys Glu Phe Leu
100 105 110
Asp Ala Asn Leu Ala Gly Ser Gly Ser Gly His Met Gln His His His
115 120 125
His His His Val Ser Ile Glu Gly Arg Ala Ser Ser Gly Gly Ser Gly
130 135 140
Leu Val Pro Arg Gly Ser Ser Gly Ser Gly Asp Asp Asp Asp Lys Ser
145 150 155 160
Ser Arg His Ser Thr Gly Tyr Glu Ser Asp Asn His Thr Thr Pro Ile
165 170 175
Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly Val Phe Arg Gly
180 185 190
Ile Gln Asp Val Arg Arg Val Pro Gly Val Ala Pro Thr Leu Val Arg
195 200 205

```
Ser Ala Ser Glu Thr Ser Glu Lys Arg Pro Phe Met Cys Ala Tyr Pro
    210                 215                 220
Gly Cys Asn Lys Arg Tyr Phe Lys Leu Ser His Leu Gln Met His Ser
225                 230                 235                 240
Arg Lys His Thr Gly Glu Lys Pro Tyr Gln Cys Asp Phe Lys Asp Cys
                245                 250                 255
Glu Arg Arg Phe Phe Arg Ser Asp Gln Leu Lys Arg His Gln Arg Arg
            260                 265                 270
His Thr Gly Val Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe
        275                 280                 285
Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu
    290                 295                 300
Lys Pro Phe Ser Cys Arg Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg
305                 310                 315                 320
Ser Asp Glu Leu Val Arg His His Asn Met His Gln Arg Asn Met Thr
                325                 330                 335
Lys Leu Gln Leu Ala Leu
            340
```

<210> 333
<211> 410
<212> PRT
<213> Homo sapiens

<400> 333

```
Met Gln His His His His His His Met Ser Asp Lys Ile Ile His Leu
                5                  10                  15
Thr Asp Asp Ser Phe Asp Thr Asp Val Leu Lys Ala Asp Gly Ala Ile
            20                  25                  30
Leu Val Asp Phe Trp Ala Glu Trp Cys Gly Pro Cys Lys Met Ile Ala
        35                  40                  45
Pro Ile Leu Asp Glu Ile Ala Asp Glu Tyr Gln Gly Lys Leu Thr Val
    50                  55                  60
Ala Lys Leu Asn Ile Asp Gln Asn Pro Gly Thr Ala Pro Lys Tyr Gly
65                  70                  75                  80
Ile Arg Gly Ile Pro Thr Leu Leu Leu Phe Lys Asn Gly Glu Val Ala
                85                  90                  95
Ala Thr Lys Val Gly Ala Leu Ser Lys Gly Gln Leu Lys Glu Phe Leu
            100                 105                 110
Asp Ala Asn Leu Ala Gly Ser Gly Ser Gly His Met Gln His His His
        115                 120                 125
His His His Val Ser Ile Glu Gly Arg Ala Ser Ser Gly Gly Ser Gly
    130                 135                 140
Leu Val Pro Arg Gly Ser Ser Gly Ser Gly Asp Asp Asp Asp Lys Ser
145                 150                 155                 160
Ser Arg Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val
                165                 170                 175
Pro Ser Leu Gly Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala
            180                 185                 190
Ala Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala
        195                 200                 205
Tyr Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro
```

```
    210                 215                 220
Pro Pro Pro Pro Pro His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly
225                 230                 235                 240
Gly Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His
                245                 250                 255
Phe Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro
            260                 265                 270
Phe Gly Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met
        275                 280                 285
Phe Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala
    290                 295                 300
Ile Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser
305                 310                 315                 320
Tyr Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser
                325                 330                 335
Phe Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln
            340                 345                 350
Gln Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp
        355                 360                 365
Ser Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser
    370                 375                 380
Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn
385                 390                 395                 400
Gln Met Asn Leu Gly Ala Thr Leu Lys Gly
                405                 410
```

<210> 334
<211> 591
<212> PRT
<213> Homo sapiens

<400> 334

```
Met Gln His His His His His His Met Ser Asp Lys Ile Ile His Leu
                  5                  10                  15
Thr Asp Asp Ser Phe Asp Thr Asp Val Leu Lys Ala Asp Gly Ala Ile
             20                  25                  30
Leu Val Asp Phe Trp Ala Glu Trp Cys Gly Pro Cys Lys Met Ile Ala
         35                  40                  45
Pro Ile Leu Asp Glu Ile Ala Asp Glu Tyr Gln Gly Lys Leu Thr Val
     50                  55                  60
Ala Lys Leu Asn Ile Asp Gln Asn Pro Gly Thr Ala Pro Lys Tyr Gly
 65                  70                  75                  80
Ile Arg Gly Ile Pro Thr Leu Leu Leu Phe Lys Asn Gly Glu Val Ala
                 85                  90                  95
Ala Thr Lys Val Gly Ala Leu Ser Lys Gly Gln Leu Lys Glu Phe Leu
            100                 105                 110
Asp Ala Asn Leu Ala Gly Ser Gly Ser Gly His Met Gln His His His
        115                 120                 125
His His His Val Ser Ile Glu Gly Arg Ala Ser Ser Gly Gly Ser Gly
    130                 135                 140
Leu Val Pro Arg Gly Ser Ser Gly Ser Gly Asp Asp Asp Asp Lys Ser
145                 150                 155                 160
Ser Arg Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala
```

```
                 165                 170                 175
Val Pro Ser Leu Gly Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly
            180                 185                 190
Ala Ala Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser
        195                 200                 205
Ala Tyr Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro
    210                 215                 220
Pro Pro Pro Pro Pro Pro His Ser Phe Ile Lys Gln Glu Pro Ser Trp
225                 230                 235                 240
Gly Gly Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val
                245                 250                 255
His Phe Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly
            260                 265                 270
Pro Phe Gly Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg
        275                 280                 285
Met Phe Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro
    290                 295                 300
Ala Ile Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro
305                 310                 315                 320
Ser Tyr Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His
                325                 330                 335
Ser Phe Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu
            340                 345                 350
Gln Gln Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr
        355                 360                 365
Asp Ser Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser
    370                 375                 380
Ser Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp
385                 390                 395                 400
Asn Gln Met Asn Leu Gly Ala Thr Leu Lys Gly His Ser Thr Gly Tyr
                405                 410                 415
Glu Ser Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg
            420                 425                 430
Ile His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg Val
        435                 440                 445
Pro Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu
    450                 455                 460
Lys Arg Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg Tyr Phe
465                 470                 475                 480
Lys Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly Glu Lys
                485                 490                 495
Pro Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Phe Arg Ser
            500                 505                 510
Asp Gln Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro Phe
        515                 520                 525
Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys
    530                 535                 540
Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Phe Ser Cys Arg Trp
545                 550                 555                 560
Pro Ser Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val Arg His
                565                 570                 575
His Asn Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala Leu
            580                 585                 590
```

<210> 335
<211> 256
<212> PRT
<213> Homo sapiens

<400> 335
Met Gln His His His His His His Gly Ser Asp Val Arg Asp Leu Asn
5 10 15
Ala Leu Leu Pro Ala Val Pro Ser Leu Gly Gly Gly Gly Gly Cys Ala
20 25 30
Leu Pro Val Ser Gly Ala Ala Gln Trp Ala Pro Val Leu Asp Phe Ala
35 40 45
Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu Gly Gly Pro Ala Pro Pro
50 55 60
Pro Ala Pro Pro Pro Pro Pro Pro Pro Pro Pro His Ser Phe Ile Lys
65 70 75 80
Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro His Glu Glu Gln Cys Leu
85 90 95
Ser Ala Phe Thr Val His Phe Ser Gly Gln Phe Thr Gly Thr Ala Gly
100 105 110
Ala Cys Arg Tyr Gly Pro Phe Gly Pro Pro Pro Pro Ser Gln Ala Ser
115 120 125
Ser Gly Gln Ala Arg Met Phe Pro Asn Ala Pro Tyr Leu Pro Ser Cys
130 135 140
Leu Glu Ser Gln Pro Ala Ile Arg Asn Gln Gly Tyr Ser Thr Val Thr
145 150 155 160
Phe Asp Gly Thr Pro Ser Tyr Gly His Thr Pro Ser His His Ala Ala
165 170 175
Gln Phe Pro Asn His Ser Phe Lys His Glu Asp Pro Met Gly Gln Gln
180 185 190
Gly Ser Leu Gly Glu Gln Gln Tyr Ser Val Pro Pro Pro Val Tyr Gly
195 200 205
Cys His Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln Ala Leu Leu Leu
210 215 220
Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu
225 230 235 240
Glu Cys Met Thr Trp Asn Gln Met Asn Leu Gly Ala Thr Leu Lys Gly
245 250 255

<210> 336
<211> 188
<212> PRT
<213> Homo sapiens

<400> 336
Met Gln His His His His His His His Ser Thr Gly Tyr Glu Ser Asp
5 10 15
Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr
20 25 30
His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg Val Pro Gly Val
35 40 45

```
Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys Arg Pro
     50                  55                  60
Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys Leu Ser
 65                  70                  75                  80
His Leu Gln Met His Ser Arg Lys His Thr Gly Glu Lys Pro Tyr Gln
                 85                  90                  95
Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Phe Arg Ser Asp Gln Leu
            100                 105                 110
Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro Phe Gln Cys Lys
        115                 120                 125
Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr
    130                 135                 140
Arg Thr His Thr Gly Glu Lys Pro Phe Ser Cys Arg Trp Pro Ser Cys
145                 150                 155                 160
Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val Arg His His Asn Met
                165                 170                 175
His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala Leu
            180                 185
```

<210> 337
<211> 324
<212> DNA
<213> Homo sapiens

<400> 337
atgcagcatc accaccatca ccacggttcc gacgtgcggg acctgaacgc actgctgccg 60
gcagttccat ccctgggtgg cggtggaggc tgcgcactgc cggttagcgg tgcagcacag 120
tgggctccag ttctggactt cgcaccgcct ggtgcatccg catacggttc cctgggtggt 180
ccagcacctc cgcccgcaac gcccccaccg cctccaccgc ccccgcactc cttcatcaaa 240
caggaaccta gctggggtgg tgcagaaccg cacgaagaac agtgcctgag cgcattctga 300
gaattctgca gatatccatc acac 324

<210> 338
<211> 462
<212> DNA
<213> Homo sapiens

<400> 338
atgcagcatc accaccatca ccaccacgaa gaacagtgcc tgagcgcatt caccgttcac 60
ttctccggcc agttcactgg cacagccgga gcctgtcgct acgggccctt cggtcctcct 120
ccgcccagcc aggcgtcatc cggccaggcc aggatgtttc ctaacgcgcc ctacctgccc 180
agctgcctcg agagccagcc cgctattcgc aatcagggtt acagcacggt caccttcgac 240
gggacgccca gctacggtca cacgccctcg caccatgcgg cgcagttccc caaccactca 300
ttcaagcatg aggatcccat gggccagcag ggctcgctgg gtgagcagca gtactcggtg 360
ccgcccccgg tctatggctg ccacaccccc accgacagct gcaccggcag ccaggctttg 420
ctgctgagga cgccctacag cagtgacaat ttatactgat ga 462

<210> 339
<211> 405
<212> DNA
<213> Homo sapiens

<400> 339
atgcagcatc accaccatca ccaccaggct ttgctgctga ggacgcccta cagcagtgac 60

aatttatacc aaatgacatc ccagcttgaa tgcatgacct ggaatcagat gaacttagga 120
gccaccttaa agggccacag cacagggtac gagagcgata accacacaac gcccatcctc 180
tgcggagccc aatacagaat acacacgcac ggtgtcttca gaggcattca ggatgtgcga 240
cgtgtgcctg gagtagcccc gactcttgta cggtcggcat ctgagaccag tgagaaacgc 300
cccttcatgt gtgcttaccc aggctgcaat aagagatatt ttaagctgtc ccacttacag 360
atgcacagca ggaagcacac tggtgagaaa ccataccagt gatga 405

<210> 340
<211> 339
<212> DNA
<213> Homo sapiens

<400> 340
atgcagcatc accaccatca ccaccacagc aggaagcaca ctggtgagaa accataccag 60
tgtgacttca aggactgtga acgaaggttt tttcgttcag accagctcaa aagacaccaa 120
aggagacata caggtgtgaa accattccag tgtaaaactt gtcagcgaaa gttctcccgg 180
tccgaccacc tgaagaccca caccaggact catacaggtg aaaagccctt cagctgtcgg 240
tggccaagtt gtcagaaaaa gtttgcccgg tcagatgaat tagtccgcca tcacaacatg 300
catcagagaa acatgaccaa actccagctg gcgctttga 339

<210> 341
<211> 1110
<212> DNA
<213> Homo sapiens

<400> 341
atgcagcatc accaccatca ccaccactcc ttcatcaaac aggaaccgag ctggggtggt 60
gcagaaccgc acgaagaaca gtgcctgagc gcattcaccg ttcacttctc cggccagttc 120
actggcacag ccggagcctg tcgctacggg cccttcggtc ctcctccgcc cagccaggcg 180
tcatccggcc aggccaggat gtttcctaac gcgccctacc tgcccagctg cctcgagagc 240
cagcccgcta ttcgcaatca gggttacagc acggtcacct tcgacgggac gcccagctac 300
ggtcacacgc cctcgcacca tgcggcgcag ttccccaacc actcattcaa gcatgaggat 360
cccatgggcc agcagggctc gctgggtgag cagcagtact cggtgccgcc cccggtctat 420
ggctgccaca cccccaccga cagctgcacc ggcagccagg ctttgctgct gaggacgccc 480
tacagcagtg acaatttata ccaaatgaca tcccagcttg aatgcatgac ctggaatcag 540
atgaacttag gagccacctt aaagggccac agcacagggt acgagagcga taaccacaca 600
acgcccatcc tctgcggagc ccaatacaga atacacacgc acggtgtctt cagaggcatt 660
caggatgtgc gacgtgtgcc tggagtagcc ccgactcttg tacggtcggc atctgagacc 720
agtgagaaac gccccttcat gtgtgcttac ccaggctgca ataagagata ttttaagctg 780
tcccacttac agatgcacag caggaagcac actggtgaga aaccatacca gtgtgacttc 840
aaggactgtg aacgaaggtt ttttcgttca gaccagctca aaagacacca aaggagacat 900
acaggtgtga aaccattcca gtgtaaaact tgtcagcgaa agttctcccg gtccgaccac 960
ctgaagaccc acaccaggac tcatacaggt gaaaagccct tcagctgtcg gtggccaagt 1020
tgtcagaaaa agtttgcccg gtcagatgaa ttagtccgcc atcacaacat gcatcagaga 1080
aacatgacca aactccagct ggcgctttga 1110

<210> 342
<211> 99
<212> PRT
<213> Homo sapiens

<400> 342
Met Gln His His His His His His Gly Ser Asp Val Arg Asp Leu Asn
1 5 10 15
Ala Leu Leu Pro Ala Val Pro Ser Leu Gly Gly Gly Gly Gly Cys Ala
20 25 30
Leu Pro Val Ser Gly Ala Ala Gln Trp Ala Pro Val Leu Asp Phe Ala
35 40 45
Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu Gly Gly Pro Ala Pro Pro
50 55 60
Pro Ala Pro Pro Pro Pro Pro Pro Pro Pro Pro His Ser Phe Ile Lys
65 70 75 80
Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro His Glu Glu Gln Cys Leu
85 90 95
Ser Ala Phe

<210> 343
<211> 152
<212> PRT
<213> Homo sapiens

<400> 343
Met Gln His His His His His His His Glu Glu Gln Cys Leu Ser Ala
1 5 10 15
Phe Thr Val His Phe Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys
20 25 30
Arg Tyr Gly Pro Phe Gly Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly
35 40 45
Gln Ala Arg Met Phe Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu
50 55 60
Ser Gln Pro Ala Ile Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp
65 70 75 80
Gly Thr Pro Ser Tyr Gly His Thr Pro Ser His His Ala Ala Gln Phe
85 90 95
Pro Asn His Ser Phe Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser
100 105 110
Leu Gly Glu Gln Gln Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His
115 120 125
Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr
130 135 140
Pro Tyr Ser Ser Asp Asn Leu Tyr
145 150

<210> 344
<211> 133
<212> PRT
<213> Homo sapiens

<400> 344
Met Gln His His His His His His Gln Ala Leu Leu Leu Arg Thr Pro
1 5 10 15
Tyr Ser Ser Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met
20 25 30

```
Thr Trp Asn Gln Met Asn Leu Gly Ala Thr Leu Lys Gly His Ser Thr
          35                  40                  45
Gly Tyr Glu Ser Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln
     50                  55                  60
Tyr Arg Ile His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg
 65                  70                  75                  80
Arg Val Pro Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr
                 85                  90                  95
Ser Glu Lys Arg Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg
            100                 105                 110
Tyr Phe Lys Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly
        115                 120                 125
Glu Lys Pro Tyr Gln
    130
```

<210> 345
<211> 112
<212> PRT
<213> Homo sapiens

<400> 345

```
Met Gln His His His His His His His Ser Arg Lys His Thr Gly Glu
                  5                  10                  15
Lys Pro Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Phe Arg
             20                  25                  30
Ser Asp Gln Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro
          35                  40                  45
Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu
     50                  55                  60
Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Phe Ser Cys Arg
 65                  70                  75                  80
Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val Arg
                 85                  90                  95
His His Asn Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala Leu
            100                 105                 110
```

<210> 346
<211> 369
<212> PRT
<213> Homo sapiens

<400> 346

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Met Gln His His His His His His His Ser Phe Ile Lys Gln Glu Pro
                  5                  10                  15
Ser Trp Gly Gly Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe
             20                  25                  30
Thr Val His Phe Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg
          35                  40                  45
Tyr Gly Pro Phe Gly Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln
     50                  55                  60
Ala Arg Met Phe Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser
 65                  70                  75                  80
```

```
Gln Pro Ala Ile Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly
                 85                  90                  95
Thr Pro Ser Tyr Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro
            100                 105                 110
Asn His Ser Phe Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu
        115                 120                 125
Gly Glu Gln Gln Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr
    130                 135                 140
Pro Thr Asp Ser Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro
145                 150                 155                 160
Tyr Ser Ser Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met
                165                 170                 175
Thr Trp Asn Gln Met Asn Leu Gly Ala Thr Leu Lys Gly His Ser Thr
            180                 185                 190
Gly Tyr Glu Ser Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln
        195                 200                 205
Tyr Arg Ile His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg
    210                 215                 220
Arg Val Pro Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr
225                 230                 235                 240
Ser Glu Lys Arg Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg
                245                 250                 255
Tyr Phe Lys Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly
            260                 265                 270
Glu Lys Pro Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Phe
        275                 280                 285
Arg Ser Asp Gln Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys
    290                 295                 300
Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His
305                 310                 315                 320
Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Phe Ser Cys
                325                 330                 335
Arg Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val
            340                 345                 350
Arg His His Asn Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala
        355                 360                 365
Leu
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<210> 347
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 347
ggctccgacg tgcgggacct g 21

<210> 348
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 348
gaattctcaa agcgccagct ggagtttggt 30

<210> 349
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 349
ggctccgacg tgcgggacct g 21

<210> 350
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 350
gaattctcaa agcgccagct ggagtttggt 30

<210> 351
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 351
cacagcacag ggtacgagag c 21

<210> 352
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 352
gaattctcaa agcgccagct ggagtttggt 30

<210> 353
<211> 29
<212> DNA

<213> Artificial Sequence

<220>
<223> Primer

<400> 353
cacgaagaac agtgcctgag cgcattcac 29

<210> 354
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 354
ccggcgaatt catcagtata aattgtcact gc 32

<210> 355
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 355
caggctttgc tgctgaggac gccc 24

<210> 356
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 356
cacggagaat tcatcactgg tatggtttct cacc 34

<210> 357
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 357
cacagcagga agcacactgg tgagaaac 28

<210> 358
<211> 30

<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 358
ggatatctgc agaattctca aagcgccagc 30

<210> 359
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 359
cactccttca tcaaacagga ac 22

<210> 360
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 360
ggatatctgc agaattctca aagcgccagc 30

<210> 361
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 361
ggttccgacg tgcgggacct gaacgcactg ctg 33

<210> 362
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 362
ctgccggcag cagtgcgttc aggtcccgca cgtcggaacc 40

<210> 363

<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 363
ccggcagttc catccctggg tggcggtgga ggctg 35

<210> 364
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 364
cggcagtgcg cagcctccac cgccacccag ggatggaa 38

<210> 365
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 365
cgcactgccg gttagcggtg cagcacagtg ggctc 35

<210> 366
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 366
cagaactgga gcccactgtg ctgcaccgct aac 33

<210> 367
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 367
cagttctgga cttcgcaccg cctggtgcat ccgcatac 38

<210> 368
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 368
cagggaaccg tatgcggatg caccaggcgg tgcgaagtc 39

<210> 369
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 369
ggttccctgg gtggtccagc acctccgccc gcaacgcc 38

<210> 370
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 370
ggcggtgggg gcgttgcggg cggaggtgct ggaccacc 38

<210> 371
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 371
cccaccgcct ccaccgcccc cgcactcctt catcaaacag 40

<210> 372
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 372
ctaggttcct gtttgatgaa ggagtgcggg ggcggtgga 39

<210> 373
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 373
gaacctagct ggggtggtgc agaaccgcac gaagaaca 38

<210> 374
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 374
ctcaggcact gttcttcgtg cggttctgca ccaccccag 39

<210> 375
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 375
gtgcctgagc gcattctgag aattctgcag at 32

<210> 376
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 376
gtgtgatgga tatctgcaga attctcagaa tgcg 34